HOIST TIRE HANGER

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BACKGROUND OF THE INVENTION

Workers in automotive repair stores, tire shops and local garages change tens of millions of vehicle tires every year. Worn tires are constantly being changed to prevent unsafe driving conditions. Similarly, in regions having varying road conditions due to the climate, vast numbers of tires are changed to properly equip a vehicle with the best tires for the seasonal road conditions.

Under current commercial practices, each time an individual changes a vehicle's tire, they are subjecting themselves to a variety of potential injuries due to the weight of the tire and the necessary body contortions required to move the tire from the vehicle to the ground, or vice versa. Typically, the vehicle is driven onto a hydraulic hoist and then the vehicle is lifted some height from the ground wherein the tires are removed from the vehicle and placed upon the ground. As the vehicle may be several feet from the ground, the individual is often required to bear the weight of the tire for a considerable time while placing the tire on the ground. Further, the transitory nature of tires placed upon the ground in a workspace is a safety hazard.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGURE 1 discloses a tire-hanging device 20. The tire hanging device 20 includes a hoist wrap section 22, an elongated section 24, and a tire hanging section 26. Further, the tire-hanging device 20 also preferably incorporates a pivitable joint 28 located in the elongated section 24. The pivotable joint 28 preferably includes a pin 30 and a locking device 38.

The hoist wrap section 22 is a generally U-shaped section having one end attached to an end of the elongated section 24 and the other end of the hoist wrap section 22 having a free end 32. A generally U-shaped structure of the hoist wrap section is designed to fit over the horizontal member of the automobile lift. The free end 32 portion of the hoist wrap section 22 is designed to allow a tire hanging device 20 to be easily attached to, and removed from the automotive lift.

Elongated section 24 is a generally straight section located between and at an angle to the hoist wrap section 22 and the tire hanging section 26. Located in the elongated section 24 is a pivotal joint 28, which allows rotating the tire hanging section 26 out of the way when the device is not being employed. The pivotable joint is typically a bearing assembly, for example, a pin 30 and frictional locking device 38 combination. More specifically, a threaded pin 30 and locking nut 40 combination is considered to be within the scope of this invention. Further, a hinge (not shown), such as a wrap hinge is employable with this device to rotate the device in a vertical manner.

The tire hanging section 26 is connected at an angle to the elongated section 24. The tire hanging section 26 generally consists of a straight member of sufficient length to hold an automotive tire while the tire-hanging device 20 is being employed. The tire hanging section 26 employs an open end 34, which is inserted through the axle hole of an automotive wheel thereby serving as the holding mechanism for the tire.

FIGURE 2 is a photograph of the tire-hanging device 20 as it is mounted on an automotive hoist. The photo illustrates the hoist wrap section 22 securing the tire-hanging device 20 to the horizontal automotive lifting member. Further, the elongated section 24 and the tire hanging section 26 is extended from the automotive hoist to some distance therefrom.

FIGURE 3 is another view of the tire-hanging device 20 holding an automotive tire. The picture illustrates the tire hanging section 26 extending through the axel hole in the automotive wheel. Further, the upwardly directed tire hanging section 26 prevents the tire from falling from the free end 34 of the tire hanging section 26.

FIGURE 4 is a photograph of another angle of the tire-hanging device 20, being employed to hold an automotive tire on an automotive lifting device. As can be seen in this photo the generally U-shaped hoist wrap section 22, extends around the rectangularly shaped horizontal arm of the lifting mechanism thereby locking the tire hanging device 20 in position. Further, as can be seen in this photograph the tire-hanging device 20 is locatable anywhere along the horizontal lifting arm. Likewise, dependant upon the length of the elongated section 24 and the relative angles of the tire-hanging device 20, the tire may be held at a variety of locations relative to the ground, hoist, and vehicle.

FIGURE 5 is yet another illustration of the tire-hanging device 20 holding an automotive tire from a horizontal member of the automotive lifting device. As can be seen in this FIGURE the automotive tire is maintained at a height that is optionally convenient for the automotive mechanic. As such, the mechanic is not required to do excessive bending, twisting, or lifting while moving tires to and from the vehicle.

FIGURES 6 and 7 disclose alternative embodiments of the invention. FIGURE 6 discloses the device 20 formed from two pieces, having an overlapping joint between the two pieces. Alternatively, FIGURE 7 illustrates the device being formed as a single piece.

It is within the scope of this invention that the device is constructed to varying sizes dependent upon the employment environment of the device. Conceptually, a larger, more rigid device is employable with heavier tires and a smaller, more compact version for light automotive concerns. Further, it is anticipated that the device, in its rotatable form, is rotatable about a single or multiple axes. Likewise, the material choice of the device is diverse. FIGURES 2 through 5 illustrate a device manufactured from steel or steel based alloy. However, it is anticipated that the device is capable of being manufactured from any other metallic material or alloy, for example, aluminum and titanium. Further, it is also anticipated that many other materials are capable of being used, for example, hard plastics or polymer based materials. Additionally, it is anticipated that the device shall be painted, colored, or died a bright color so as to improve the safety of the working environment by making the device readily visible. This device is intended to make it safer and more convenient for automotive mechanics and the like to change or otherwise remove and replace tires on automotive vehicles. The device allows the tires to be removed from the vehicle and stored at the workmen's upright height. This prevents the worker from having to repeatedly bend over and lift heavy objects from the ground to the work height at the vehicle, or vice versa, thereby increasing safety and comfort of the workers.